Narrow River Watershed

Action Plan 2001 – 2004

I. Introduction

Why Organize Around Watersheds?

Watersheds are natural ecological systems containing land, water, plants, animals, and humans. All of the land that drains to the outlet of a lake, stream, or ocean is located within one watershed, and all land is located in one watershed or another. Unlike arbitrary political boundaries, watershed boundaries are delineated by the natural contours of the land and the flow of water. Water from snowmelt and rainfall flow from the high elevation boundaries of a watershed into lower elevations containing streams, lakes, oceans and other water bodies.

People are accustomed to dividing land into areas defined by man-made state and municipal boundaries. Traditional land and resource planning is organized around these city, town, and state borders. Increasingly, however, people are finding it makes more ecological sense to plan resource management around watershed boundaries. Today's most pressing environmental problems are more interconnected and complex than in the past. By treating a watershed ecosystem as an integrated whole, cumulative impacts of population and growth can be more adequately addressed. Planning around a watershed requires an understanding of how all the organisms and activities within it are connected.

The Rhode Island Watershed Partnership: Making Connections

Some of the underlying concepts that guide the Rhode Island Watershed Partnership include:

The land within a watershed has a natural connection to the water within its boundaries. When an activity takes place on the land, the water draining down the land is affected. The condition and quality of water at any point in a waterbody is directly related to activities that take place on the surrounding land.

Activities upstream have a direct impact on water quality downstream. As water flows across land and into streams and rivers, it carries pollutants along the way. The collective effects of harmful activities carried out miles upstream affect downstream communities. Rather than evaluating each negative impact separately, it is necessary to consider the cumulative impacts of these point and non-point source pollutants.

Watersheds connect communities across man-made boundaries. Because watersheds do not stop at town or state lines, residents and business people in different states and municipalities need to work together to achieve effective resource management.

Human land use decisions are connected to water quality and watershed health. How land is used- where open space is protected, how land is zoned, where industrial sites are permitted, how landfills are used and managed- has a direct and measurable impact on water quality.

Human quality of life and economic health is directly linked to environmental health. People depend on the environment for their drinking water, food, recreation and livelihood. Within watersheds are homes, schools, and businesses. When natural resources within the watershed are degraded, the problem not only impacts the environment, but also affects quality of life and the economy.
The decisions we make today impact the future. Human actions can have long-lasting effects on the environment. The results of poor land and water use decisions may take generations to detect and repair. Conversely, careful planning and organized management can help shape the future for the common good.

The Rhode Island Watershed Partnership recognizes these connections, and attempts to address environmental management issues by planning around watershed ecosystems. This innovative approach is based on an understanding that local people's interests in land and water should be linked to decisions that affect these resources. Natural resource management is greatly enhanced by the involvement and collaboration of a wide range of people living and working in the watershed. The Watershed Partnership brings people together-local residents, businesses, town officials, and state and federal representatives- to more effectively coordinate programs, tools, and resources in order to support the sustainability of the watershed and all who live, work, and play within it.

The Rhode Island Watershed Partnership is not a new regulatory program. Instead, it is a new way of organizing existing programs and efforts that focuses on the power of stakeholder involvement and collaboration. The approach is based on two premises: that organizations and people who collaborate can be more effective than groups that work alone, and that local stakeholder interests should guide environmental management and protection The benefits of the Watershed Approach are numerous:

Benefits for Local Residents:
-Watershed partnerships build trust and enhance working relationships, providing a neutral forum where various interests can be addressed.
-Watershed partnerships help stakeholder groups target and pool together technical and financial resources.
-Through collaborative grant writing and program design, partner organizations have greater access to competitive funding sources.

Benefits for State and Federal Agencies:
-The Watershed Partnership enhances government's ability to solve complex problems associated with the cumulative effects of non-point source pollution.
-Heightened communication fostered by watershed partnerships helps expand the scope and quality of information available for government decision-making. Consequently, state and local government can more effectively coordinate and implement existing programs, and build on past efforts with creative new initiatives.

Generating an Action Plan for the Narrow River Watershed

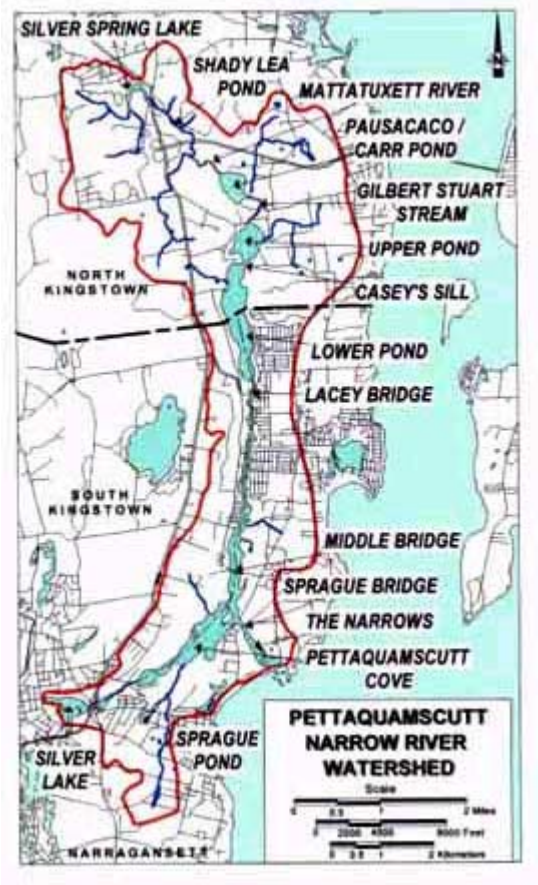
At the heart of the Narrow River Watershed Action Plan are the water quality remediation activities identified in the Narrow River Watershed 'Water Quality Restoration Plan' or TMDL Report, which is in its final public comment period. The RIDEM Office of Water Resources, namely Project Lead, Kevin Bartlett, drafted this plan based on years of water quality data by many staffmembers and volunteers, additional monitoring and pollution source identification. As a result, numerous nonpoint and point sources of pollution, stormwater being of the primary vehicle, were targeted and mitigative measures proposed. The action plan lists various structural and non-structural 'Best Management Practices' requiring the cooperation of many watershed stakeholders.

Partners

Towns of Narragansett, North Kingstown and South Kingstown
Narrow River Preservation Association
Washington County Regional Planning Council
University of Rhode Island/URI-GSO
Coastal Resources Management Council
RIDEM
RIDOH
RIDOT
RIDOA – Statewide Planning Program
RI Water Resources Board
Coastal Resources Center/Sea Grant
U.S. Fish and Wildlife
Environmental Protection Agency
Natural Resources Conservation Service
South Rhode Island Conservation District

II. Existing Watershed Conditions[1]

The Narrow River watershed encompasses approximately thirty-six (36) square kilometers within the towns of North Kingstown, Narragansett and South Kingstown. The river lies in the southern portion of the watershed. It is just over 9.5 kilometers long and runs parallel to the West Passage of Narragansett Bay. Although considered a river, it may more accurately be described as the composite of a tidal inlet and backbay, an estuary, and two fjord-like ponds. The estuarine portion of the river runs southerly from Gilbert Stuart Stream to its mouth where it discharges to Rhode Island Sound. The river is regionally significant as a recreational resource, a wildlife habitat and shellfishing resource.



The Narrow River estuary is comprised of three distinct reaches. The relatively sparsely settled upper reach consists of two kettle-hole ponds separated from each other and the lower reaches by shallow sills less than one meter deep. The Upper Pond and the Lower Pond have maximum widths of approximately 500 meters and depths of 13.5 and 19.5 meters, respectively. The ponds are highly stratified and contain permanently anoxic bottom layers. Biogenic hydrogen sulfide accumulates to levels among the highest reported in marine waters (Gaines, 1975). The heavily developed middle reach between Lacey Bridge and Middlebridge Bridge is quite narrow (approximately 10 meters) and shallow (one to two meters) (ASA, 1989). The lower reach consists of a long narrow inlet extending 2 km. from the river mouth to Middlebridge Bridge. Depth in this reach is typically between one and two meters while width varies from approximately 10 meters in "the Narrows" near Sprague Bridge, to 100 meters in the upper portion of Pettaquamscutt Cove.

Water Quality

(For an assessment of the water quality of Narrow River, please see the draft Narrow River TMDL. It is available through DEM's web site at http://www.state.ri.us/dem/programs/benviron/water/quality/rest/index.htm)

[1] Adopted from *Draft Narrow River TMDL*. 2001. RIDEM - Water Resources. Prepared by Kevin Bartlett.

III. Action Plan

TOPIC: Surface Water Quality

GOALS: Clean and Plentiful Water. Fishable/Swimmable surface water bodies.

ISSUE I: The Narrow River and its tributaries are impaired due to excessive levels of fecal coliform bacteria.

Objective 1: Reduce nutrient and bacterial inputs to surface water by implementation of the Total Maximum Daily Load (TMDL).

Strategy 1.1: Minimize pollutant loadings and storm water volumes discharged to the Narrow River.

Activities:

1.1.1 Implement the Narrow River Water Quality Restoration (TMDL) Plan (*Please refer to the attach spreadsheet for more specific action related to the Narrow River TMDL*).

1.1.2 Towns of Narragansett and South Kingstown should identify any residents not connected to sewers and require that they connect.

1.1.3 Conduct discharge detection and source identification in the Wampum and Conanicus catchments.

1.1.4 Conduct dry and wet weather sampling to identify fecal coliform sources to Crooked Brook.

1.1.5 Educate and involve watershed residents in watershed protection through outreach campaigns and formation of watershed action teams.

1.1.6 Eliminate bacterial contamination in Mumford Brook, a tributary to the Narrow River, from human sources (failing septic systems).

Strategy 1.2: Monitor water quality of the Narrow River and its tributaries on a perpetual basis.

Activity:

1.2.1 Conduct water quality monitoring of Narrow River and selected tributaries.

TOPIC: Healthy Ecosystems

GOALS: Healthy Ecosystems. Abundant Open Space and Recreational Opportunities.

ISSUE II: Unrestricted use of Personal Watercraft (PWC) on Narrow River threatens other recreational uses of the river and the health of the Narrow River ecosystem.

Objective 2: Balance recreational uses of the Narrow River and minimize impact to the River from those uses.

Strategy 2.1: Regulate the use of PWCs on Narrow River so that their use does not infringe on other recreational users and does not impact the riparian ecosystem.

Activities:

2.1.1. Work with the Towns of Narragansett and South Kingstown to improve enforcement on the Narrow River of "no wake zones" and other boating safety regulations.

ISSUE III: Identify parcels of land within the Narrow River Watershed and target them for protection.

Objective 3: Protect the watershed through open space acquisition.

Strategy 3.1 Use the South County Greenspace Project to identify critical lands for open space protection in the watershed.

Activities:

3.1.1 Participate in the South County Greenspace Project.

3.1.2 Work on collaboration with land trusts in Narragansett, South Kingstown and North Kingstown via the Washington County Land Trust Coalition.

TOPIC: Surface Water Quality									
Objective 1: Restore surface water quality to swimmable and fishable levels.									
Strategy 1.1: Minimize pollutant loadings and storm water volumes discharged to the Narrow River.									
Activity	***Action***	***Responsible Parties***	***Funding Source***	***Time period***	***Status***	***Focus Area***	***Contact Person***	***Contact Phone***	***Contact Email***
1.1.1	Form an 'implementation team' of technical staff and watershed stakeholders to carry out the recommendations of the water quality restoration plan.	RIDEM	n/a	Until water quality has been restored fishable and swimmable levels.	A stakeholder group was convened as a part of the TMDL process.	Narrow River watershed	Jeff Nield, Kevin Cute, Kevin Bartlett	222-3434x4405; 401-783-3370; 222-3961x7163	jnield@dem.state.ri.us; k_cute@crmc.state.ri.us; kbartlet@dem.state.ri.us
1.1.1	Develop and implement strategy to reduce stormwater pollutant loads via 'structural or nonstructural' Best Management Practices (BMPs) at the following outfalls: Shadbush Trail Outfall, Lakeside Brive and South Ferry Road Outfalls, Old Pine Road Outfall, Shagbark Road Outfall, Woodbridge Road Outfall, Pettaquamscutt Avenue Outfall, Indian Trail Outfall	Narragansett/CRMC/RIDEM	Aquafund, 319-Nonpoint, Town	2006	Ongoing	Specific outfalls in Narrow River Watershed	Mike Savalia; Clarkson Collins; Jim Riordan	789-1044; (401) 222-3961 x4421	jriordan@dem.state.ri.us
1.1.1	Wampum Road and Conanicus Road Outfalls	Narragansett/CRMC/RIDEM	Aquafund, 319-Nonpoint, Town	**2001-2002**	Wet detention pond design plans completed. Application for 319 funding conditionally approved	Specific outfall in Narrow River Watershed	Mike Savalia; Clarkson Collins; Jim Riordan	789-1044; (401) 222-3961 x4421	jriordan@dem.state.ri.us
1.1.1	Mettatuxet Beach Outfall	Narragansett/CRMC/Southern Rhode Island Conservation District (SRICD)	Aquafund, 319-Nonpoint, Town	2002	Design and feasibility study of BMP at Mettatuxet Beach outfall in progress.	Mettatuxet Beach Outfall	Alicia Lehrer, SRICD	401-882-8832	Alicia-Lehrer@ri.nacdnet.org
1.1.2	Towns of Narragansett and South Kingstown should identify any residents not connected to sewers and require that they connect.	Towns of Narragansett and South Kingstown	Towns	Ongoing	Completed by Narragansett. South Kingstown is in process. Completion in 2002	Narrow River watershed	Mike Savalia, Public Works Narragansett	789-1044, 789-9331	

TOPIC: Surface Water Quality									
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1.1.3	Conduct discharge detection and source identification in the Mettatuxet, Wampum and Conanicus catchments.	Towns of Narragansett	Towns	Start October 2001	Completed by Narragansett. South Kingstown is in process. Completion in 2002	Narrow River watershed	Public Works Narragansett and S.K.	789-1044, 789-9331	
1.1.4	Conduct dry and wet weather sampling to identify fecal coliform sources to Crooked Brook.	RIDEM	CWA	Summer/Fall 2001	Ongoing	Crooked Brook	Jason McNamee	401-222--4700x7520	jmcnamee@dem.state.ri.us
1.1.5	Educate and involve watershed residents in watershed protection through outreach campaigns and formation of a citizen-based watershed action team. Potential outreach/awareness projects include: Policing of pets & pet waste ordinance, waterfowl deterence.	Towns of Narragansett and South Kingstown; NRPA; SRICD	Aquafund, Town	*see STATUS*	Ongoing NRPA educational program. Aquafund grant awarded to SRICD to launch an education campaign.	Narrow River watershed	Executive Director, NRPA; Alicia Lehrer, SRICD	401-783-6277; 401-882-8832	nrpa@netsense.net; Alicia-Lehrer@ri.nacdnet.org
1.1.5	Recruit riparian landowners to allow vegetative buffers of tall, coarse vegetation to grow along the river.	Towns of Narragansett and South Kingstown; NRPA	Wildlife Habitat Protection (WHP) Grants	New	New - Possible activity of watershed action team	Narrow River watershed	Executive Director, NRPA; Alicia Lehrer, SRICD	401-783-6277; 401-882-8832	nrpa@netsense.net; Alicia-Lehrer@ri.nacdnet.org
TOPIC: Surface Water Quality									
Objective 1: Restore surface water quality to swimmable and fishable levels.									
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1.1.6	Investigate possible failing ISDSs in the vicinity of Mumford Brook, a tributary to the Narrow River.	RIDEM - OCI	RIDEM	*see STATUS*	Suspected septic systems are being investigated. Projected repairs in 2001	Mumford Brook	David Chopy, RIDEM	401-1360x7257	dchopy@dem.state.ri.us
Strategy 1.2: Monitor water quality of the Narrow River and its tributaries on a perpetual basis.									
1.2.1	Conduct water quality monitoring of Narrow River and selected tributaries.	NRPA/Watershed Watch	NRPA	*Annually, May - October*	Ongoing	Narrow River watershed	Annette DaSalva	401-783-6277	nrpa@netsense.net

TOPIC: Healthy Ecosystems									
Activity	***Action***	***Responsible Parties***	***Funding Source***	***Time period***	***Status***	***Focus Area***	***Contact Person***	***Contact Phone***	***Contact Email***
Objective 2: Balance recreational uses of the Narrow River and minimize impact to the River from those uses.									
Strategy 2.1: Regulate the use of PWCs on Narrow River so that their use does not infringe on other recreational users and does not impact the riparian ecosystem.									
2.1.1	Work with the Towns of Narragansett and South Kingstown to improve enforcement on the Narrow River of "no wake zones" and other boating safety regulations.	NRPA	n/a	Spring/Summer 2001	New Project	Narrow River watershed	Executive Director, NRPA	401-783-6277	nrpa@netsense.net
2.1.2	Develop boating safety campaign for public access points on the Narrow River.	NRPA	n/a	Spring/Summer 2002	New Project	Narrow River watershed	Executive Director, NRPA	401-783-6278	
Objective 3: Protect the watershed through open space acquisition.									
Strategy 3.1 Use the South County Greenspace Project to identify critical lands for open space protection in the watershed.									
3.1.1	Participate in the South County Greenspace Project.	Towns of Narragansett, North Kingstown and South Kingstown, Narrow River Land Trust, NK Land Trust, SK Land Trust	USDA Forest Service	Winter 2001/2002	Regional Conferences on 11/8 & 12/5, 2001	Narrow River watershed	Jeff Nield	401-222-3434x4405	jnield@dem.state.ri.us
3.1.2	Work on collaboration with land trusts in Narragansett, South Kingstown and North Kingstown via the Washington County Land Trust Coalition.	Narrow River Land Trust, NK Land Trust, SK Land Trust		Ongoing	Monthly Mtgs held at SKLT	Narrow River watershed, Washington County	Jeff Nield, Joanne Riccitelli, Julie Sharpe, Linda Steere	401-222-3434x4405	jnield@dem.state.ri.us